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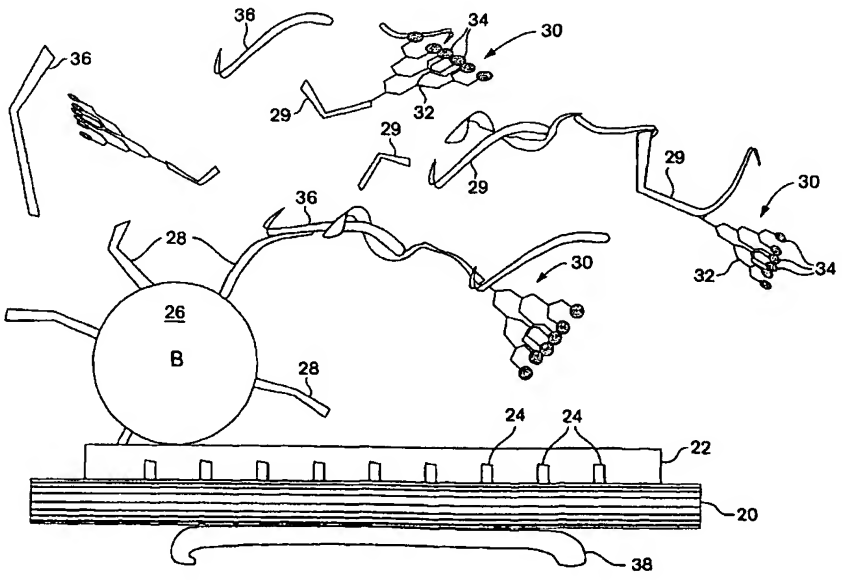
14 August 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: RAPID AND SENSITIVE DETECTION OF PROTEIN AGGREGATION



(57) Abstract: Methods, assays, and components are described in which biological samples can be rapidly and sensitively analyzed for the presence of species associated with neurodegenerative disease. Techniques and components are provided for diagnosis of disease, as well as for screening of candidate drugs for treatment of neurodegenerative disease. The techniques are simple, extremely sensitive, and utilize readily-available components. Binding species, capable of binding a neurodegenerative disease aggregate-forming or aggregate-forming species, are fastened to surfaces of electrodes and surfaces of particles, or provided free in solution, to bind aggregate-forming species and/or be involved in aggregation.

WO 02/001230 A3

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01N33/543 G01N33/68 G01N33/553 G01N33/58 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 31839 A (HARVARD COLLEGE) 23 July 1998 (1998-07-23) claims 27-51 page 11, line 24 - line 32 example 17 --- -/--	1-54, 56-71, 94-142, 175-248, 251-258, 262-269

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
19 November 2002	05.05.03

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Cuendet, P

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	SIGAL G B ET AL: "SELF-ASSEMBLED MONOLAYER FOR THE BINDING AND STUDY OF HISTIDINE-TAGGED PROTEINS BY SURFACE PLASMON RESONANCE" ANALYTICAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY. COLUMBUS, US, vol. 68, no. 3, 1996, pages 490-497, XP000916112 ISSN: 0003-2700 page 495 page 497 ---	1,21,25, 26,31, 50,59, 94,106, 111,119, 175,251, 262
X	WO 98 37421 A (MAGGIO JOHN E ;ESLER WILLIAM P (US); HARVARD COLLEGE (US); UNIV MI) 27 August 1998 (1998-08-27) claims 26,30 ---	94,111, 175-177
X	WO 99 08695 A (UNIV CALIFORNIA) 25 February 1999 (1999-02-25) claims 27-51 claim 31 ---	94,111, 175-177
A	TERZI E ET AL: "Interaction of Alzheimer beta-amyloid peptide(1-40) with lipid membranes." BIOCHEMISTRY. UNITED STATES 2 DEC 1997, vol. 36, no. 48, 2 December 1997 (1997-12-02), pages 14845-14852, XP002221485 ISSN: 0006-2960 the whole document ---	1-54, 56-71, 94-142, 175-248, 251-258, 262-269
P,X	WO 00 43791 A (BAMDAD R SHOSHANA ;BAMDAD CYNTHIA CAROL (US); MINERVA BIOTECHNOLOG) 27 July 2000 (2000-07-27) the whole document -----	1-54, 56-71, 94-142, 175-248, 251-258, 262-269

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/20232

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. [X] Claims Nos.: 270-274,376-378
because they relate to subject matter not required to be searched by this Authority, namely:

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy

2. [ ] Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. [ ] Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. [ ] As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. [ ] As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. [ ] As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. [X] No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-54, 56-71, 94-142, 175-248, 251-258, 262-269

Remark on Protest

[ ] The additional search fees were accompanied by the applicant's protest.

[ ] No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-54,56-71,94-142,175-248,251-258,262-269

method for binding aggregates or aggregating species, the binding being relative to a surface of an article and kit comprising an article/two articles having a surface.

2. Claims: 55,72-93,249-259

compositon comprising a binding species

3. Claims: 143-149

forming a self-assembled monolayer.

4. Claims: 150-164

method comprising the providing at least two binding species and a linker to be exposed.

5. Claims: 165-169

forming a solution containing a species to detect aggregation in solution.

6. Claims: 170-174

system comprising at least two particles.

7. Claims: 260-261

article comprising the surface of the article.

8. Claims: 260-261

composition comprising beta-amyloid peptide.

9. Claims: 276-319

method for allowing a first colloid particle to be immobilised respective to a second colloid particle.

10. Claims: 320-335

method for determining a second sample's ability to affect the first sample's propensity for involvement in aggregation.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

11. Claims: 335-375

exposing a plurality of particles to a candidate drug.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9831839 A	23-07-1998	US 6306584 B	23-10-2001
		AU 5926598 A	07-08-1998
		EP 0981643 A	01-03-2000
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